REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-41 are presently active in this case, Claims 17-39 being previously withdrawn from consideration, and Claims 40 amended by way of the present amendment.

In the outstanding Official Action, Claim 40 was objected to for a minor informality, and Claims 1-16 and 40-41 were rejected under 35 U.S.C. §102(b) as being anticipated by US Patent No. 5, 822, 352 to Mizutani et al.

First, Applicants wish to thank Examiner Schillinger for the June 14th telephone discussion at which time Applicants requested a personal interview in this case. Examiner Schillinger declined to grant a personal interview at this time, but indicated that such an interview would be granted upon filing of a response and request for continued examination (RCE). Since this response is filed along with an RCE, Applicants respectfully request that Examiner Schillinger contact the undersigned to schedule a personal interview before issuing another office action in this case.

Turning now to the merits, Applicants invention is directed to a method of manufacturing a semiconductor element. As described in the background section of Applicant's specification, semiconductor elements are collectively formed on a semiconductor wafer that is divided into a plurality of regions by separation boundaries that will be used to physically separate the wafer areas into discrete components. In this prior art process, individual structures are formed with relatively high precision within each region of the wafer without crossing the separation boundary. However, when the semiconductor elements are actually separated, the actual separation plane may be misaligned from the separation boundary resulting in the structure of the element being inadvertently severed as

shown in Figure 13, or misaligned on the element as shown in Figure 14. Applicant's invention is directed to mitigating this problem.

Specifically, Applicants independent Claim 1 recites a method of manufacturing a semiconductor element including forming a plurality of semiconductor elements on a semiconductor wafer such that two adjacent semiconductor elements define a separation boundary. Also recited is providing an integral semiconductor structure across these separation boundaries such that the integral semiconductor structure is common to the two adjacent semiconductor elements formed on the semiconductor wafer. Then, according to Claim 1, the two adjacent semiconductor elements are physically separated approximately at the separation boundary to form discrete semiconductor elements each having a portion of the integral semiconductor structure. By forming the integral semiconductor structure across the separation boundary, the actual separation plane separates not only the semiconductor elements, but also the integral structure into discrete structures corresponding to each element. This provides a higher yield for manufactured semiconductor devices.

As discussed in Applicants' January 8, 2004 amendment, it is Applicants' position that Mizutani et al. does not disclose providing an integral semiconductor structure across the separation boundary and physically separating the two adjacent semiconductor elements approximately at the separation boundary to form discrete semiconductor elements each having a portion of the integral semiconductor structure as now recited in independent Claim 1. Nevertheless, the Response to Arguments section of the Official Action states:

> Applicant's arguments filed 1/8/04 have been fully considered but they are not persuasive. The arguments state that Mizutani et al ('352) fails to teach a physical separation at a separation boundary, however, this is not persuasive because as shown in Fig. 1e, the manifestation of a physical separation is carried out by the separation groove (111) which is formed by cleaving (Col. 11, lines; 1-10) Therefore, Mizutani anticipates the amended claim language.

Applicant respectfully submit, however, that the portion of Mizutani et al. cited by the examiner fails to teach the limitations of Claim 1.

Specifically, Mizutani et al. discloses an optical semiconductor apparatus including a single substrate and at least two semiconductor laser portions each having a semiconductor laser structure and a current injection unit for independently injecting currents into the semiconductor laser portions. As shown in Figures 1A-1D, the laser portions are made up of active layers formed on (111) surface 122b and (-1 -1 1) surface 122a slanted with respect to the (001) GaAs substrate. As seen in Figure 1A, the surfaces 122a and 122b are initially separated by the distance L2, which eventually defines the groove 111. While the Official Action does not specify what feature of Mizutani et al. corresponds to the claimed "semiconductor structure," the action appears to consider the laser active regions 122a and 122b to meet this feature of the claim. However, the elements 122a and 122b are not "an integral semiconductor structure across said separation boundary such that said integral semiconductor structure is common to said two adjacent semiconductor elements formed on said semiconductor wafer," as required by the Claim 1.

To the extent that Applicants are misunderstanding the Official Action's reading of Mizutani et al., Applicants respectfully request that any subsequent action in this case specifically identify which features of Mizutani et al. are correspond which limitations of the claims.

In addition, Fig. 1E and column 11, lines 1-10 of Mizutani cited by the Official Action disclose that the separation groove 111 in Mizutani is formed to reach to the GaAs substrate 101, but the groove does not reach to the bottom of the GaAs substrate 101. Thus, the two semiconductor lasers of Mizutani et al. are still on a single integral GaAs substrate 101. Accordingly, even if the Official Action could consider some portion of the Mizutani device as the claimed "integral structure," Mizutani still fails to physically separate the

semiconductor laser elements ***to form discrete semiconductor elements*** as also required by Claim 1. That is, the semiconductor laser elements in Mizutani et al. fail to have a portion that is formed from an integral structure by physically separating the semiconductor elements.

Finally, the outstanding Official Action also asserts that in Mizutani et al., the separation groove 111 is formed by cleaving. However, Applicants assert that it is the two opposite end faces (i.e., a front face of the semiconductor laser element situated in front and a back face of the other semiconductor laser element situated behind in Fig.1E of Mizutani et al.) that are formed by cleaving. This is clear from the statement that "distances from the separation groove to the cleaved end facets are equal to each other," at column 11, lines 8-9 of Mizutani et al.

Thus, Claim 1 patentably defines over the cited reference to Mizutani et al. Moreover, as Claims 2-16 and 40-41 depend from Claim 1, these claims also patentably define over the cited reference to Mizutani et al.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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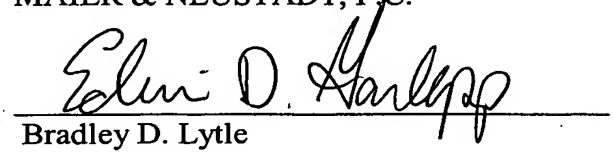

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